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range of] wherein each of said portions, of said pair of
diffractive gratings, formed in the chamfered shape comprises
a flat surface, and a length a of said flat surface in a
direction of grating arrangement of said diffractive grating
is $0.5 \mu\text{m} < a < 2 \mu\text{m}$.

19. (Amended) An optical system, comprising:
a diffractive optical element according to any one
of claims 2-7, 9 and 10; and
a lens system,
wherein each of said portions, of said pair of
diffractive gratings, formed in the chamfered shape comprises
a curved surface, and a radius of curvature r of said curved
surface on a cross sectional plane including a direction of
grating arrangement of the diffractive grating is [according
to claim 13, wherein a radius of curvature of the curved
surface lies within the range of] $0.5 \mu\text{m} < r < 2 \mu\text{m}$.

REMARKS

In view of the above amendments and the following
remarks, Applicant requests favorable reconsideration and
allowance of the above-identified application.

Claims 1-7 and 9-19 remain pending in this
application, with Claims 1-7 and 9-12 being independent. By

this Amendment, Applicant has amended Claims 1-7, 9-12, 18 and 19.

Claims 1-7 and 9-19 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. Applicant has amended Claims 1-7, 9-12, 18 and 19 to attend to the matters set forth in the Office Action as giving rise to the rejection. Accordingly, Applicant requests withdrawal of the § 112, second paragraph, rejection.

Claims 1, 11 and 12 stand rejected under 35 U.S.C. § 102 or under 35 U.S.C. § 103 over U.S. Patent No. 5,048,925 (Gerritsen, et al.). Claims 2-7, 9, 10 and 13-19 stand rejected under 35 U.S.C. § 103 over the Gerritsen, et al. patent in view of U.S. Patent No. 5,279,924 (Sakai, et al.). Claims 13-19 stand rejected under 35 U.S.C. § 103 over the Gerritsen, et al. patent. Applicant traverses these rejections.

As recited in independent Claims 1-7 and 9-12, Applicant's invention is directed to a diffractive optical element including a pair of diffractive gratings differing in dispersion from each other. In addition, the maximum optical path length difference occurring in the pair of diffractive gratings with respect to each of at least two wavelengths is m (integer) times the wavelength, and the values of m in the two wavelengths are the same.

The Gerritsen et al. patent is directed to a structure for directing incident radiation in a selected direction. The Office Action acknowledges that this patent does not specifically describe that a maximum optical path difference is an integer multiple of a design wavelength, but states that such a property would be inherent to the diffractive grating described in the Gerritsen, et al. patent. However, Applicant submits that the present invention satisfies the condition that a maximum optical path length difference occurring in a pair of diffractive gratings with respect to each of at least two wavelengths is an integer times the wavelength, with the value of the integer in the two wavelengths being the same. Applicant submits that such a property is not described in the Gerritsen, et al. patent.

The Sakai, et al. patent is directed to a method of manufacturing an optical diffraction grating. The Office Action merely cites this patent as describing a grating having a chamfered shape for peak and/or valley regions. However, Applicant submits that this patent does not describe an optical element with the property of the maximum optical path length difference as set forth above with respect to the present invention.

Accordingly, Applicant submits that the Gerritsen, et al. and Sakai, et al. patents, taken alone or combination,


fail to disclose or suggest at least the feature of a maximum optical path length difference occurring in a pair of diffractive gratings with respect to each of at least two wavelengths is m (integer) times the wavelength, and the values of m in the two wavelengths are the same, as recited in independent Claims 1-7 and 9-12.

For the foregoing reasons, Applicant submits that the independent claims are distinguishable over the applied patents, whether those patents are taken alone or in combination. The remaining claims in the present application are dependent claims which depend from the independent claims, and are thus patentable over the documents of record for reasons noted above with respect to the independent claims. In addition, each recites features of the invention still further distinguishing it from the applied documents. Applicant requests favorable and independent consideration thereof.

Applicant submits that all outstanding matters in the present application have been addressed and requests early passage to issue of the application.

Applicant's undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should be directed to our below-listed address.

Respectfully submitted,



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